

23/5/20

Mini - Project

Wildlife - Park

→ A person can be a visitor to one or more park

→ A park can have zero or many visitors

→ A visitor of a particular park has a unique ticket-id based on date

→ A park can have one or many animal kinds. Similarly animal kinds can belong to one or more parks

→ A specific animal type must eat one or more food items.

Similarly a specific food item can be eaten by one or more animal kind.

* Based on the given constraints an e-r diagram has been made.

* Definition

→ Park

<u>P_id</u>	Identifies the park
Name	Name of park
Contact	Contact number of park
Location	Location of park

→ Visitor

<u>P_id</u>	Park_id
<u>F_name</u>	First name of visitor
<u>L_name</u>	Last name of visitor

→ Animal-kind

<u>P_id</u>	Park_id
<u>a_name</u>	name of species
count	number ^{of} such species present

→ Ticket

T-id

Ticket id

Price

Price of ticket

Date

Date of purchase

Year

Year of purchase

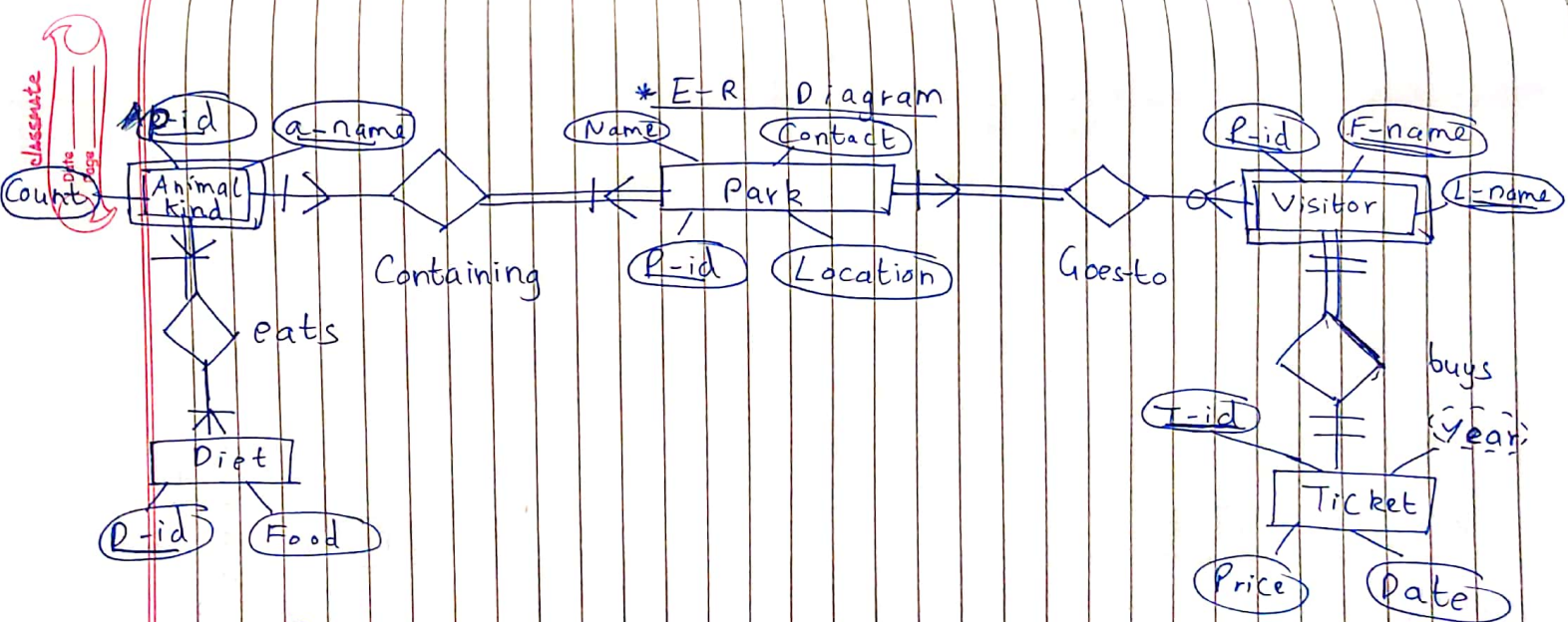
→ Diet

D-id

Diet id

Food

suitable food



[NOTE :- Here diet was a multivalued attribute which was then converted into an entity following the rules of e-r diagram. Derived attribute year (derived from date) has been used. Couple of composite primary keys have also been used.]

Relational model

Park

<u>P_id</u>	Name	Contact	Location
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Visitor

<u>P_id</u> (FK)	<u>F_name</u>	<u>L_name</u>
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ref. (park)

Animal_kind

<u>P_id</u> (FK)	<u>a_name</u>	Count
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ref (park)

Ticket

<u>T_id</u>	Price	Date	Year
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Diet

<u>D-id</u>	Food
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Goes_to

<u>P-id</u> (FK) ref (park)	<u>F-name</u> (FK) ref (visitor)	<u>L-name</u> (FK) ref (visitor)
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Containing

<u>P-id</u> (FK) ref (park)	<u>a-name</u> (FK) ref (Animal-kind)
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Eats

ref (park)	ref (Animal-kind)	ref (diet)
<u>P-id</u> (FK)	<u>a-name</u> (FK)	<u>D-id</u> (FK)

Buys

<u>P-id</u> (FK) ref. (park)	<u>F-name</u> (FK) ref (visi-tor)	<u>L-name</u> (FK) ref. (visi-tor)	<u>T-id</u> (FK) ref (Ticket)
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* Normalization

- The of each attribute contains only atomic values. \therefore Its in 1NF
- Absence of partial dependency.
 \therefore Its in 2NF
- Absence of transitive dependency
 \therefore Its in 3NF
- The L.H.S of all attributes contain only candidate key.
 \therefore Its in BCNF
- Absence of multivalued dependency
 \therefore Its in 4NF
- Here joining of relations is lossless
 \therefore Its in 5NF

FDS :-

P_id → Name, Contact, Location

P_id, a-name → Count

T_id → Price, date, Year

D_id → Food